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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,165	02/14/2002	Paul B. Hays	MAC-10102/29	8652

7590

10/18/2002

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EXAMINER

DOUGHERTY, THOMAS M

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 10/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,165

Applicant(s)

HAYS ET AL.

Examiner

Thomas M. Dougherty

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2002.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other:

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 10/01/02 have been fully considered but they are not persuasive. Regarding the Applicants' contention that the combination of Lawless et al. and Tsuruga is improper because there is no suggestion to use non-piezoelectric components with differing thermal expansion coefficients for maintenance of the overall length of the motor, note that the Examiner recognizes that references cannot be arbitrarily combined and that there must be some reason why one skilled in the art would be motivated to make the proposed combination of primary and secondary references. *In re Nomiya*, 184 USPQ 607 (CCPA 1975). However there is no requirement that a motivation to make the modification be expressly articulated. The test for combining references is what the combination of disclosures taken as a whole would suggest to one of ordinary skill in the art. *In re McLaughlin*, 170 USPQ 209 (CCPA 1971). References are evaluated by what they suggest to one versed in the art rather than by their specific disclosures. *In re Bozek*, 163 USPQ 545 (CCPA 1969). In this case at least the suggestion of a housing has been made for reasons provided in the body of the rejection.

The argument that the combination of Lawless et al. and Tsuruga would not result in the claimed structure has also been carefully considered. It has been held that the test for obviousness is not whether the features of one reference may be bodily incorporated in the other to produce the claimed subject matter but simply what the

combination of references makes obvious to one of ordinary skill in the pertinent art.

Again see *in re Bozek*, 163 USPQ 545 (CCPA 1969).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102 (b) as being anticipated by Lawless et al. (US 5,222,713). Lawless shows (fig. 12A) an improved piezoelectric (PZT, see col. 2, ll. 35-39) force motor, comprising: a housing (42) having opposing ends; a PZT element (22) concentrically (see fig. 7 in which the PZT elements form a cylinder) supported about a portion of the housing (e.g. 68) said PZT element (22) being operative to expand and contract the ends of the housing through application of an electrical signal; and a plurality of components (34, 42) in series within the housing exhibiting both positive and negative coefficients of thermal expansion which cooperate to cancel one another (col. 12, ll. 36-39) so as to reduce the overall temperature expansion of the motor. The PZT element (22) is a stacked structure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lawless et al. (US 5,222,713) in view of Tsuruga (JP 2-197180). Given the invention of Lawless et al. as noted above, he doesn't explicitly note that his components include a first member which expands in one direction; and a second member which expands in the opposite direction.

Tsuruga shows (fig. 1) an improved piezoelectric force motor, comprising: and a plurality of components (3, 4) exhibiting both positive and negative coefficients of thermal expansion which cooperate to cancel one another (see constitution) so as to reduce the overall temperature expansion of the motor. The piezoelectric element is a stacked structure.

He doesn't show a housing having opposing ends; it is unknown whether his piezoelectric element is PZT, and as there is no housing, his piezoelectric element cannot thus be supported relative the housing operative to expand and contract the ends of the housing through application of an electrical signal.

It would have been obvious to one having ordinary skill in the art to use a housing, and also to use PZT for the piezoelectric element in the device of Tsuruga, such as is taught by Lawless et al., at the time the Tsuruga invention was made in order to provide for protection of the Tsuruga device with the housing and in order to provide

the Tsuruga structure with a superstructure, that being the housing, so that it can be used to do useful work in a desired environment. Use of PZT would have further been obvious to one having ordinary skill in the art since this is a well-known material with predictable operation. Finally, regarding use of PZT, it has been held within the general skill of a worker in the art to select a known material on the basis of its suitability for intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Allowable Subject Matter

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Art Unit: 2834

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Direct inquiry concerning this action to Examiner Dougherty at (703) 308-1628.

tmd
tmd

October 16, 2002

Thomas M. Dougherty

THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2100

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